

# Helping to Meet California's Energy Needs

Individually, Californians consume less energy than any other State in the

country.\*

The problem, energy-wise, is there are an estimated 37 million individual



*Wind energy field in southern California*

Californians and we're adding 500,000 more each year. So, even

though Californians continue to increase their per capita energy efficiency, the State's energy demand as a whole continues to grow significantly, with overall consumption second only to the State of Texas.\*

California's economy is also experiencing a growth spurt, more than maintaining the State's international ranking as the sixth largest economy in the world. This dynamic economy depends upon reliable, affordable, and environmentally sound energy supplies.

Supplying these growing California energy demands is a never-ending challenge. The Bureau of Land Management (BLM) in California is helping to meet those needs from renewable energy (geothermal, wind, solar, biomass) and traditional energy (oil and gas) public land sources, as well as

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*California  
produces a  
portion of the  
energy it uses:*

*Natural gas - 16%*

*Petroleum - 42%*

*Electricity - 78%*

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playing an increasing role in transmission of that energy through powerlines and pipelines that crisscross the State.



\*See California Energy Commission. California Ranks 50th in U.S. Per Capita Electricity Use and total State kWh of usage ([www.energy.ca.gov/electricity/us\\_percapita\\_electricity.html](http://www.energy.ca.gov/electricity/us_percapita_electricity.html))



*More than  
3,000  
turbines  
produce 258  
megawatts  
of wind energy.*

## Renewable Energy

In 2002, California legally established its Renewable Portfolio Standard program, requiring an annual one percent increase in renewable energy, with the goal of increasing the percentage of electrical generation from renewable energy to 20 percent by 2017. Progress has been significant, and the State now expects to reach the 20 percent goal by 2010, and up to 33 percent by 2020. As a result, California has the most diverse portfolio of renewable energy sources in the country, and BLM is working aggressively to make public lands available to help meet those goals.

### Geothermal

Production of steam and hot water from 22 producing geothermal leases on public lands generated over 4.1 billion kilowatt-hours of electricity in 2005; enough for over 500,000 people. Royalties associated with this level of production totaled over \$12 million dollars.



*A geothermal power plant at The Geysers in northern California.*

The Geysers field in Lake and Sonoma Counties produces 46 percent of the total royalties from federal geothermal leases in California, with Coso Hot Springs in Inyo County at 34 percent, and East Mesa in Imperial County at 17 percent. Other fields in production include Heber in Imperial County, Mammoth Lakes in Mono County, and Wendel-Amedee in Lassen County.

BLM and the Forest Service have approved two new geothermal plants for the Medicine Lake Highlands in Siskiyou County. These

projects, Fourmile Hill and Telephone Flat, each propose to produce 49.9 megawatts of power for a total of almost 100 megawatts, enough to meet the electrical energy needs for 100,000 people. No construction has yet begun and both are being challenged in court.

With the increased emphasis on renewable energy, exploration interest has increased in these and other parts of the State. BLM is currently initiating review of proposals near Coso Hot Springs in Inyo County, Truckhaven/Salton Sea in Imperial County, and Mammoth Lakes in Mono County, as well as a proposal just north of Mount Shasta in Siskiyou County.

### Wind Energy

California is also a leader in the production of wind energy in the U.S., producing about 43 percent of the nation's total capacity. Production from BLM public lands contributes significantly, with more than 3,000 turbines producing 258 megawatts from 22 rights-of-way on more than 2,800 acres. Most of this production comes from the San Geronio Pass area in Riverside County and the Tehachapi Pass area in Kern County.



*California produces 43 percent of the nation's total wind capacity.*

To accelerate development, BLM completed the national Wind Energy Programmatic Environmental Impact Statement

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*Demands in California are generating new interest in renewable energy leasing and development on federal lands.*

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last year to lay the groundwork for specific project proposals. In addition, ongoing planning efforts in the Ukiah, Hollister, and Folsom BLM field office areas have included an analysis of potential wind energy projects. Currently, testing is occurring in a number of areas using anemometers to judge wind strength and sustainability.

BLM also assists in development of wind energy projects on private lands by issuing access rights-of-way for roads and power lines across public lands, such as the recently approved Pine Tree development in Kern County. Finally, efforts are also underway to "repower" existing systems to improve efficiency, reduce impacts to birds, and better integrate wind energy resources into the state's transmission system.

## Solar

California is also a pioneer in utilizing the State's renowned sunshine for solar energy, including the recent California Solar Initiative to provide incentives for solar development. On BLM public lands, solar development is just beginning in the State, but holds significant promise.



*Solar panels used to collect solar energy.*

In the fall of 2005, two major investor-owned California utilities signed contracts with a solar energy company to construct and operate two solar energy facilities on public lands in central San Bernardino and western Imperial counties that would provide initially 800 megawatts of energy annually, with plans

to increase their output to 1,750 megawatts. BLM is initiating the environmental review work necessary to consider these applications for rights-of-way on affected public lands.

## Biomass

California is also taking a leading role nationally in utilizing biomass (biologically-derived renewable materials used to produce energy, also referred to as "bioenergy") to help address its energy needs. A new "Bioenergy Action Plan" is being developed and State production goals are being considered that would significantly expand the 615 megawatts of current production by more than 1,500 megawatts by 2020.

BLM lands hold tremendous potential for this use. Currently, BLM is cooperating with Modoc County and other partners on a biomass project involving 6.6 million acres of juniper stands in northeastern California and northwestern Nevada.

Reducing the spread of juniper and thinning juniper stands will reduce wildland fire fuels, benefit rangeland health, and restore sage grouse and mule deer habitat, while potentially producing over four million tons of juniper biomass. Environmental studies are underway and juniper biomass produced could immediately be used at an existing biomass/cogeneration power plant on private lands at Honey Lake, California. This resource could make a significant contribution to the rural economy and domestic energy production.



*Bioenergy power plants will receive biomass fuel generated from BLM juniper reduction projects.*

*Geothermal leases generated 4.1 billion kilowatt hours of electricity in 2005, enough for 500,000 people.*



# Traditional Energy

## Oil and Gas

California is the nation's fifth largest producer of oil and gas from federal lands. In 2005, production from BLM public lands totaled nearly 13.5 million barrels of oil, along with 3.3 billion cubic feet of natural gas. Royalties paid to the U.S. amounted to \$26.7 million for oil and \$4 million for natural gas. Each year, half of all revenues generated are distributed to the state of California.

Most of the oil and gas leasing and development on public lands occur in central California on lands managed by the BLM's Bakersfield Field Office.



*Producing oil well in Central California.*

With the approval of the Energy Policy Act of 2005, the BLM also assumed management of the Naval Petroleum Reserve No. 2 in Kern County from the

Department of Energy. When the process to update land use planning documents is completed later this year, BLM plans to offer an additional 2,500 acres of unleased federal for competitive sale. BLM also holds quarterly lease sales offering public land mineral resources that may be of interest to industry for future exploration.



*The Midway-Sunset oil field near Bakersfield, California.*

## Transmission Systems

With 37 million people spread among almost 500 incorporated cities and thousands of rural residences spread throughout California's 58 counties, getting power from generating facilities to the public is an incredible challenge in a State covering more than 100 million acres. BLM, responsible for 15.2 million acres, works very closely with the California Energy Commission (CEC) and the California Public Utilities Commission to meet that challenge.



*Getting power from generating facilities to the public is a challenge.*

BLM already oversees some 6,200 rights-of-way across these public lands, but the growth of renewable energy and increased electricity production from all sources requires more efficient use of existing energy corridors and designation of new corridors to ease congestion.

A top priority is coordinating with the Department of Energy and other Federal agencies on preparation of a Programmatic Environmental Impact Statement to identify and designate new energy corridors on federal lands in the 11 Western states, including California.

The State of California is a cooperating agency in this important project and CEC was designated as its lead agency. An interagency workgroup has been formed to coordinate and develop a statewide response and review. This workgroup has met with the California State Association of Counties, the League of California Cities, and other public and nongovernmental groups about the purpose of the project to ensure all points of view are considered.

*Demand for transportation fuels increased by 50 percent in the past 20 years.*

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